STATINTL

LOS ANGELES TIMES

APR 2 6 1964

U.S. Orbited 25 Samos Space Spies During '63

BY ROBERT C. TOTH
Times National Science Correspondent

WASHINGTON — Last year the United States put more than 25 Samos reconnaissance satellites into orbit to watch over the Soviet Union.

This was almost double the number launched in 1962 when the satellites, which both photograph and listen electronically to Soviet installations, began going up in earnest.

The information they send back, according to government officials, provides the United States with better surveillance of Russia than it ever received from the years of U-2 overflights that ended disastrously in May, 1960.

Sen. Barry Goldwater (R-Ariz.), in his campaign for the GOP Presidential nomination, suggested last month resuming the U-2 flights to "spy on the heartlands of our enemies."

He urged, according to news dispatches, that the nation use "any method at our disposal to gain information on our enemies, whoever they are; and that includes the U-2." He also suggested using the new A-11 aircraft, which was designed as a successor to the U-2, if needed.

Government's Points

Aircraft flights are no necessary today, government officials reply. They make three points:

1—The quality of photographs from Samos satellites 150 miles up is on a par with U-2 pictures taken from 13 miles altitude, and better cameras continue to be developed.

U-2 pictures caught 4-in. paint strips on airport parking lots, it was said. Samos cameras, if they are that good, should be able to take pictures of a potted plant in Pismo Beach all the way from Los Angeles.

2 — Samos electronic "ferreting" devices are providing better information on the location and types of Soviet radar and radio facilities than the U-2 did.

3—The Samos satellites give much wider coverage of the Soviet Union. Every day every Samos in orbit passes over the Soviet Union at least six times and probably more, and each photographs a wider swath than the U-2.

Another Samos advantage over the U-2 is that it almost eliminates the danger of political repercussion, officials said. Countries claim the air over their territory as sovereign and inviolate, but the atmosphere peters out almost completely at 20 miles, far below the orbiting heights of the satellites.

There is no international agreement on how high a nation's sovereignty extends, but this is a moot issue. Taking pictures from space is like taking pictures across a national border.

Russian Photos

More to this point, however, the United States believes the Soviets are photographing American territory from satellites. They would have a hard time making a case against Samos.

American knowledge of the innards of the Soviet satellites illustrates another highly developed technique of modern espionage—listening in on the electronic telemetry from those craft.

The electronic "signatures" have been so well decoded that U.S. experts can tell the number of revolutions a minute of fuel pumps aboard a rising rocket, for example.

The story of Samos, an acronym for "satellite and missile observation systems," goes back to 1960 when Francis Gary Powers' U-2 was shot down over Russia.

The first Samos flight occurred in October, six months later. It failed, but subsequent ones were sufficiently successful that by the time of the fourth Samos, in late 1961, the United States had clamped tight security wraps around the project, as well as an associated though less successful one, called Midas.

Midas satellites are equipped with infra-red detectors to register the flaming exhausts from rocket launchers as soon as the missiles leave the pads. Their purpose is to increase the warning time to western defense.

In 1962, the Defense Department launched about 30 satellites, some half of which were Samos. Last year it launched 50, more than half of them Samos, and many of the rest Midas satellites, according to officials.

Unconfirmed reports suggest two different and improved Samos vehicles are being flown today, one taking pictures over very large areas while the other is turned on to take close-ups of interesting events discovered by the first.

Their film capsules, about the size of bushel baskets, are ejected over the Pacific between California and Hawaii. After entering the air, they float down by parachutes, to be plucked in mid-air by aircraft based in Hawaii. The Air Force is said to have an exceptionally good catching average for the exceptionally valuable capsules.